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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,031	09/27/2001	Francois Pachet	450117-03506	2592
20999	7590	07/23/2004	EXAMINER	
FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151			LU, KUEN S	
			ART UNIT	PAPER NUMBER
			2177	

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/965,031

Applicant(s)

PACHET ET AL.

Examiner

Kuen S Lu

Art Unit

2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendments

1. The Action is responsive to the Applicant's Amendments, filed on May 5, 2004.
2. In responding to Applicant's Amendments made to the claims where claims were cancelled and new issue relating to backup client was introduced, the Examiner has created this Office Action for Final Rejection as shown next.
3. As for the Applicant's Remarks on claim rejections, filed on May 5, 2004, has been fully considered by the Examiner, please see discussion in the section ***Response to Arguments***, following the Office Action for Final Rejection.

Specification

4. The spacing of the lines of the specification is such as to make reading and entry of amendments difficult. New application papers with lines double spaced on good quality paper are required. Correction is required. Please see MPEP § 608.01(m).

Abstract

5. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

6. The abstract of the disclosure is objected to because it contains phrases which can be implied, such as "invention". In this case the Abstract starts with "The invention".

Correction is required. See MPEP § 608.01(b). Also please note the abstract was previously objected in the Examiner's non-final Office Action.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woo (U.S. Patent 6,678,680) and in view of Kravitz et al. (U.S. Publication 2003/0164844, hereafter "Kravitz").

As per independent claim 1, Woo teaches "method of generating sequencing information representing a sequence of items selected in a database, each of the items comprising a set of descriptors" (See col. 35-40 and Fig. 1, elements 108-116, wherein **Woo's elements are the descriptors and subset search of songs already found as matches** is equivalent to Applicant's sequence generation).

Woo does not specifically teach "specifying a length of said sequence".

However, Kravitz teaches "specifying a length of said sequence" (See Fig. 4, element 46 and Page 5, [0091] wherein Kravitz' **length of a parameter in a query search** is equivalent to Applicant's length of sequence).

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Kravitz' reference with Woo's teachings by selecting a length as the number of items of sequence to be returned in a query search because both references are devoted to multi-media processing and retrieval. The combination of references would have made Woo's system more user-friendly, flexible, accurate and efficient search engine because of better specified search parameters.

Woo further teaches the following:

"applying similarity relation techniques between said items" (See col. 10, lines 12-14 wherein Woo's **difference score subroutine for calculating absolute difference of notes between current song and song in a database** is equivalent to Applicant's applying similarity relation techniques on items), "in which, for at least one item to appear in the sequence, said item is chosen from said database on the basis of a similarity relation with an item in said sequence with which said chosen item shall be associated" (See col. 10, lines 12-22 wherein Woo's **current song is the item to appear in the sequence, and item from the database is the item associated through similarity or match of notes** is equivalent to Applicant's limitation wherein the song is equivalent to Applicant's item); and "producing said associated items as at least part of said generated" sequence (See Fig. 1, element 112 and col. 9, line 54 – col. 10, line 2 wherein Woo's **near search process retrieves a sequence of songs** is equivalent to Applicant's producing items as generated) and "said sequence thereby having a morphological continuity" (See col. 9, lines 30-31 and 54-62 wherein Woo's **sorting songs retrieved by near search process**

which calculating difference score and comparing such to a threshold value teaches songs sorted based on scores is equivalent to the Applicant's morphological order).

Woo does not specifically teach "fixed-length" for the sequence generated.

However, Kravitz teaches "fixed-length" (See Fig. 4, element 46 and Page 5, [0091] wherein Kravitz' **length of a parameter in a query search** is equivalent to Applicant's entering a fixed-length numerical).

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Kravitz' reference with Woo's teachings by entering a fixed-length as the number of items of sequence to be returned in a query search because both references are devoted to multi-media search and returning the results retrieved. The combination of references would have improved Woo's system performance because the search engine is limited to return a fixed number of items from the retrieved result.

As per Claim 2, Woo teaches each of the "items is represented by a series of constraint variables having a domain in the database" (See col. 11, lines 37-45 wherein Woo's **analyzing the commonly occurring patterns of the songs in the song database** in which patterns of songs is equivalent to Applicant's constraint variables).

As per Claim 3, Woo teaches "similarity-relation applying step comprises modeling each of said descriptors in a desired sequence as a constrained variable" (See col. 6, lines 10-15 wherein Woo's **converting the input notes into a displayable, Format-2 string** is equivalent to Applicant's modeling steps applying to descriptor).

As per Claim 4, Woo teaches "similarity-relation applying step comprises applying a global similarity relation technique by combining individual similarity measures on all of said descriptors" (See col. 6, lines 20-33 wherein Woo's **comparing the adjacent nodes or change of octave values** is equivalent to Applicant's steps on applying similarity relation to descriptors).

As per Claim 5, Woo teaches "similarity-relation applying step comprises providing mathematical similarity functions" (See col. 6, lines 20-33, wherein Woo's **using the difference function as the mathematical similarity functions** is equivalent to Applicant's mathematical similarity functions).

As per Claim 6, Woo teaches "similarity-relation applying step comprises providing similarity relations defined by given thresholds" (See col. 9, lines 54-62 wherein Woo's **specifying an allowable variance as a threshold for comparing with the calculated difference score** is equivalent to Applicant's steps on applying mathematical similarity relations defined by a given thresholds).

As per Claim 8, Woo teaches "sequence-generating step further comprises subjecting said unary constraints to a processing of variables domain reduction" (See col. 10, lines 25-30 wherein Woo's **performing a filter function options on the input note sequence and the songs from the song database in order to improve the search results** is equivalent to Applicant's sequence-generating step).

As per Claim 9, Woo teaches "descriptors are expressed in terms of descriptor/value pairs respectively, and each of said values for said descriptor is selected from descriptor/value lists" (See col. 6, lines 10-15 wherein Woo's **converting**

and displaying the input note to a displayable string of characters is equivalent to Applicant's limitation wherein note/character pair is equivalent to Applicant's descriptor/value pair).

As per Claim 10, Woo teaches "each of said descriptors is associated to a descriptor type" (See col. 6, lines 10-15 wherein Woo's **converting and displaying the input note to a displayable string of characters whose type is character** is equivalent to Applicant's descriptor and type association).

As per Claim 11, Woo teaches "descriptor type comprises (See least one type selected from the group consisting of Integer-Type, Taxonomy-Type and Discrete-Type" (See col. 6, lines 10-15 wherein Woo's **converting and displaying the input note to a displayable string of characters which are taxonomy-type and discrete-type** is equivalent to Applicant's limitation wherein notes/strings of character is of the type discrete).

As per Claim 12, Woo further teaches "step of specifying at least one of said values comprises specifying a first title and a last title of said items in said sequence" (See Fig. 1, elements 108 and 116, col. 3, lines 55-59 and col. 4, lines 7-15, wherein Woo's **selecting title as the search type and entering the notes for the first and last tiles for searches to be performed** is equivalent to Applicant's title selection).

As per Claim 14, the combined Woo teaches "database comprises musical pieces" (See the Abstract, line 1 wherein Woo's **searching a desired song in a song database** is equivalent to Applicant's musical pieces).

As per claim 16, Woo teaches "a general-purpose computer and a monitor for display of the generated information" (See Fig. 1 and col. 3, lines 33-43 wherein Woo's **multi-**

purpose computer and screen interface is equivalent to Applicant's a general-purpose computer and a monitor).

As per claim 17, Woo teaches "A computer program product adapted to carry out the method of claim 1, when loaded into a general purpose computer" (See Fig. 1 and col. 3, lines 33-43 wherein Woo's **multi-purpose computer and screen interface** is equivalent to Applicant's computer program product).

As per claim 18, Woo teaches "the similarity relation is applied to obtain two contiguous items of the sequence" (See col. 10, lines 12-14 and col. 9, lines 30-31 and 54-62 wherein Woo's **difference score subroutine for calculating absolute difference of notes between current song and song in a database and sorting songs retrieved** is equivalent to Applicant's applying similarity steps for obtaining contiguous items of the sequence).

As per claim 19, Woo teaches "method of producing" a "sequence of items out of a database by specifying partial information" (See Fig. 1, element 116, wherein Woo's **entering a string of notes for searching songs** is equivalent to Applicant's method of producing a sequence of items by using a partial information).

Woo does not specifically teach "specifying a length of said sequence".

However, Kravitz teaches "specifying a length of said sequence" (See Fig. 4, element 46 and Page 5, [0091] wherein Kravitz' **length of a parameter in a query search** is equivalent to Applicant's specifying a length of a sequence).

It would have been obvious to one having ordinary skill in the art at the time of the

applicant's invention was made to combine Kravitz' reference with Woo's by selecting a length as the number of items of sequence to be returned in a query search because both references are devoted to multi-media processing and retrieval. The combination of references would have made Woo's system more user-friendly, flexible, accurate and efficient search engine because of better specified search parameters.

Woo further teaches the following:

"introducing a global continuity constraint allowing to compute a morphing between items of said sequence" (See col. 9, lines 54-62 wherein Woo's **specifying an allowable variance as a threshold for comparing with the calculated difference score** is equivalent to Applicant's introduction of a constraint for computing morphing); and
"taking as input partial information about arbitrary items in said sequence to be produced" (See Fig. 1, element 116, wherein Woo's **entering a string of notes for searching songs** is equivalent to Applicant's entering partial information).

As per claim 20, Woo teaches "a general-purpose computer and a monitor for display of the generated information" (See Fig. 1 and col. 3, lines 33-43 wherein Woo's **multi-purpose computer and screen interface** is equivalent to Applicant's a general-purpose computer and a monitor).

As per independent claim 21, Woo teaches "method of generating sequencing information representing a sequence of items selected in a database, each of the items comprising a set of descriptors" (See col. 35-40 and Fig. 1, elements 108-116, wherein Woo's **elements are the descriptors and subset search of songs already found as**

matches is equivalent to Applicant's generating items of a sequence where each item has a set of descriptors).

Woo does not specifically teach "specifying a length of said sequence".

However, Kravitz teaches "specifying a length of said sequence" (See Fig. 4, element 46 and Page 5, [0091] wherein Kravitz' **length of a parameter in a query search** is equivalent to Applicant's entering partial information).

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Kravitz' reference with Woo's by selecting a length as the number of items of sequence to be returned in a query search because both references are devoted to multi-media processing and retrieval. The combination of references would have made Woo's system more user-friendly, flexible, accurate and efficient search engine because of better specified search parameters.

Woo further teaches the following:

"applying similarity relation techniques between said items" (See col. 10, lines 12-14 wherein Woo's **difference score subroutine for calculating absolute difference of notes between current song and song in a database** is equivalent to Applicant's applying similarity relation techniques on items), "in which, for at least one item to appear in the sequence, said item is chosen from said database on the basis of a similarity relation with an item in said sequence with which said chosen item shall be associated" (See col. 10, lines 12-22 where Woo's **current song is the item to appear in the sequence, and item from the database is the item associated through similarity or match of notes is**

equivalent to Applicant's limitation wherein the song is equivalent to Applicant's item);
and

"producing said associated items as at least part of said generated" sequence (See Fig. 1, element 112 and col. 9, line 54 – col. 10, line 2 wherein Woo's **near search process retrieves a sequence of songs** is equivalent to Applicant's producing associated items) and "said sequence thereby having a morphological continuity" (See col. 9, lines 30-31 and 54-62 wherein Woo's **sorting songs retrieved by near search process which calculating difference score and comparing such to a threshold value** is equivalent to Applicant's producing items as generated).

Woo does not specifically teach "fixed-length" for the sequence generated.

However, Kravitz teaches "fixed-length" (See Fig. 4, element 46 and Page 5, [0091] wherein Kravitz' **length of a parameter in a query search** is equivalent to Applicant's entering a fixed-length numerical).

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Kravitz' reference with Woo's by entering a fixed-length as the number of items of sequence to be returned in a query search because both references are devoted to multi-media search and returning the results retrieved. The combination of references would have improved Woo's system performance because the search engine is limited to return a fixed number of items from the retrieved result.

Woo teaches "wherein said descriptors are expressed in terms of descriptor/value pairs respectively, and each of said values for said descriptor is selected from

descriptor/value lists" (See col. 6, lines 10-15 wherein Woo's **converting and displaying the input note to a displayable string of characters** teaches note/character pair is equivalent to Applicant's descriptor/value pair).

As per Claim 7, Woo teaches "sequence-generating step comprises transforming said at least one of said values into unary constraints in terms of constraint satisfaction programming techniques" (See col. 6, line 9, col. 7, line 23, col. 8, line 53, col. 9, line 16, col. 10, line 4 and col. 11, line 10 wherein Woo's **executing the routines to transform notes into calculated differences to satisfy the searching criteria for obtaining the songs from the song database** is equivalent to Applicant's sequence generating steps).

As for Claim 13, Woo teaches "step of specifying at least one of said values comprises specifying a morphological style of said items in said sequence" (See Fig. 1, element 108, col. 3, line 60 – col. 4, line 15, col. 6, line 9, col. 7, line 23, col. 8, line 53, col. 9, line 16, col. 10, line 4 and col. 11, line 10, wherein Woo's **specifying music as the search type and entering the notes for the songs to be search where notes are of morphological style, and generating a difference sequence for each song selected from the database and a difference argument for the note sequence of the referencing song, and calculating the distances between the difference argument and each of the difference sequences** is equivalent to Applicant's value specifying step of morphological style of items).

As per Claim 15, Woo teaches "values comprise titles, and said titles form a music program" (See Fig. 1, elements 108 and 116, col. 3, lines 55-59 and col. 4, lines 7-15, wherein Woo's **selecting title as the search type and entering the notes for the songs to be searched** is equivalent to Applicant's tile and items from a music program).

Response to Arguments

9. The Applicant's arguments filed on May 5, 2004 have been fully considered, but they are not persuasive, for the Examiner's response, please see discussion below.

a). At Page 9, concerning U.S.C. § 102(b) rejections of claims 1-17, the Applicant kindly clarified and outlined a preferred embodiment of the application and further explained how the algorithm works by analyzing similarities between an existing and a candidate items.

As to the above argument, the Examiner has fully considered and noted.

b). At Page 10, concerning claims 1-17, the Applicant argued that the Woo reference

- 1). Fails to provide sequence,
- 2). Yields only one result and reflects no sequencing, and
- 3). Executes only within a particular title.

As to the above argument, the Examiner disagrees because the Woo reference sorts the songs through some type of filtering option (See col. 9, lines 28-31) which implies yielding a plurality of songs and reflecting a sequence, and the reference teaches searching by patterns, song attributes, types and options, among others.

10. In light of the forgoing arguments for claims 1-17 and on the grounds as described in the final Office Action for rejecting claims 1-17 and 18-21, the U.S.C § 103 rejections for claims 1-21 are hereby sustained.

11. The prior art made of record

A. U.S. Patent 6,678,680

G. U.S. Publication 2003/0164844

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

B. U.S. Patent	5,850,229
C. U.S. Patent	5,925,843
D. U.S. Patent	6,665,641
E. U.S. Patent	6,629,097
F. U.S. Patent	6,223,210

Conclusions

12. THIS ACTION IS MADE FINAL.

The Applicant are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. The prior art made of record, listed on form PTO-892, and not relied upon, if any, is considered pertinent to Applicant's disclosure.

Art Unit: 2177

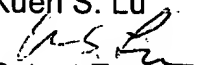
If a reference indicated as being mailed on PTO-FORM 892 has not been enclosed in this action, please contact Lisa Craney whose telephone number is (703) 305-9601 for faster service.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuen S Lu whose telephone number is 703-305-4894.

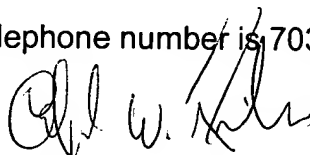
The examiner can normally be reached on 8 AM to 5 PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on 703-305-9790. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Kuen S. Lu

Patent Examiner

July 21, 2004



Alford W. Kindred

Primary Examiner

July 21, 2004